

THREE NEW SPECIES OF THE GENUS TENTHREDO LINNAEUS (HYMENOPTERA, TENTHREDINIDAE) FROM CHINA

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Abstract *Tenthredo lunani* Wei et Niu, sp. nov., *Tenthredo dolichomisca* Wei et Niu, sp. nov. and *Tenthredo panrubialina* Wei et Niu, sp. nov. are described from Henan Province, China. The type specimens are kept in the Insect Collection of Central South University of Forestry and Technology, Changsha, Hunan Province, China.

Key words Hymenoptera, Tenthredinidae, *Tenthredo*, new species, China.

Tenthredo L. is the largest genus of Tenthredinidae and about a thousand species have been described in the world. Of them 290 species have been reported from China (Wei et al., 2006). During 2003 to 2006, the sawfly research group of Central South University of Forestry and Technology collected about 70 species of *Tenthredo* L. from several localities of Henan Province (Longyuwan of Luanchuan County, Mt. Tianchi and Mt. Baiyun of Songxian, Baotianman of Neixiang County, Baligou of Huixian, Mt. Liankang of Xinxian). Among them 3 species are new to science. They are described herein. Two of the new species have also been collected from Zhejiang and Shaanxi Provinces separately. The type specimens of the new species are kept in the Insect Collection of Central South University of Forestry and Technology, Changsha, Hunan Province, China.

Tenthredo lunani Wei et Niu, sp. nov. (Figs. 1–5)

Female. Body length 14 mm (Fig. 1). Head and thorax black; clypeus, labrum and mandibles white with black margins; palpi largely; a triangular macula on lower part of hind orbit, a macula on each of anterior corner and narrow posterior margin of pronotum, lateral margins of posttergite, a central macula on postnotum and posterior corner of metepisternum, white; abdomen black with strong metallic blue tinge, lateral sides of tergite 1 and ventral parts of tergite 4, posterior margins of sternites 2–3, 5 and 4th sternite entirely, white. Legs black, ventral sides of front coxa and trochanter largely, anterior side of front femur and of tibia, apex of middle trochanter, a stripe on anterior side of middle and apical parts of middle femur, a small dot on apex of middle tibia, white. Wings distinctly infumated with an indistinctly defined smoky cross band below stigma. Body hairs silvery.

Head strongly shining; apical part of labrum with a

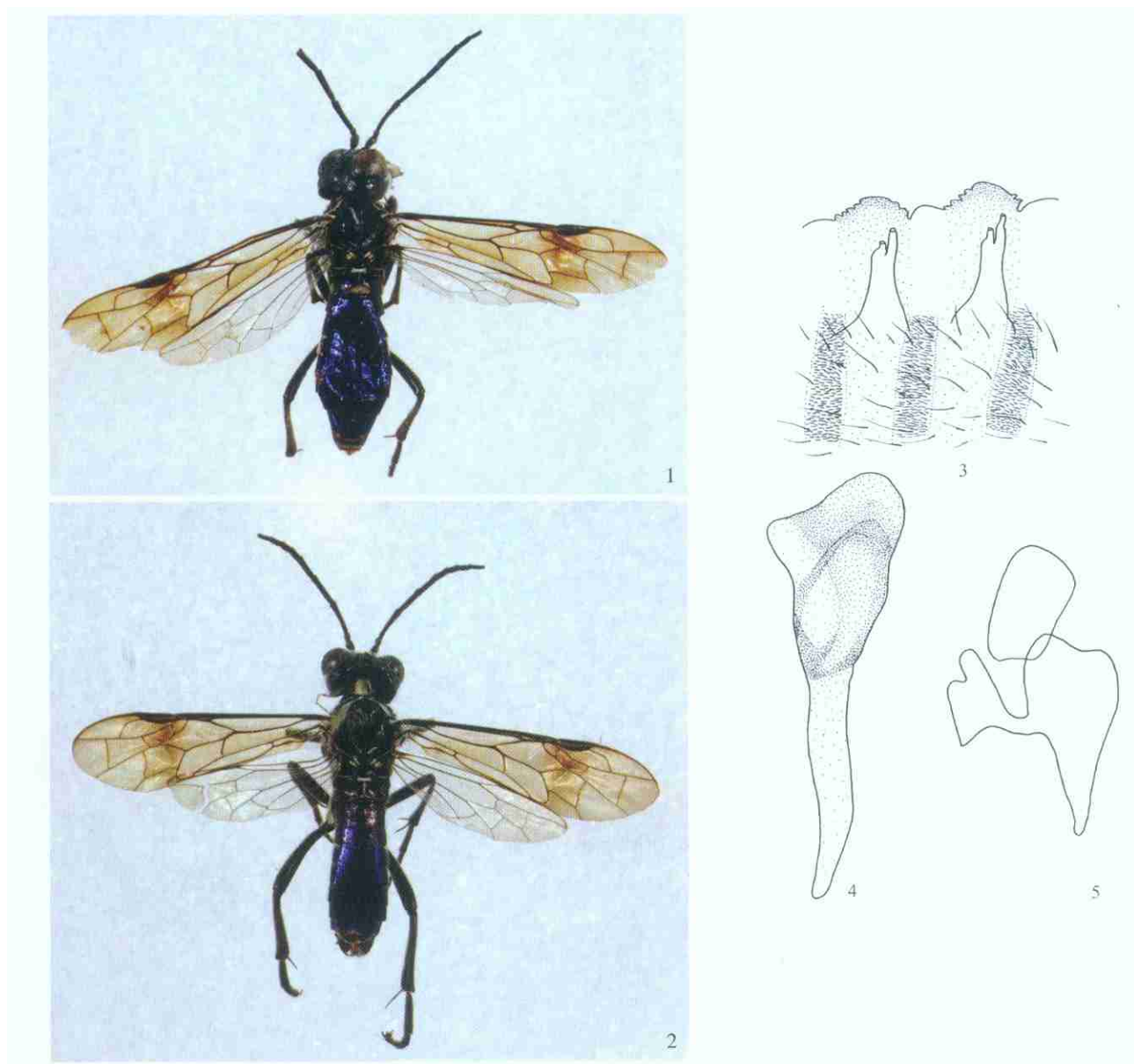
few minute punctures; frontal walls, frons, most part of inner orbit, temples nearby and postocellar area with larger but shallower punctures, interspaces shining, hind orbit with minute punctures; notum of thorax minutely and sparsely punctured, shining; parapsis microsculptured, middle and posterior parts of mesoscutellum coarsely and densely punctured, feebly shining; posttergite and metascutellum impunctate and strongly shining; upper half of mesepisternum above transversal ridge coarsely and densely punctured and microsculptured; katemeron, ventral part of mesepisternum and metepisternum finely and densely punctured, feebly shining; mesepimeron and metepimeron impunctate, shining; abdominal tergites 1–2 polished, without punctures and microsculptures, other tergites very sparsely and minutely punctured, strongly shining.

Clypeus broadly incised anteriorly to a depth about 1/3 length of clypeus with bottom obtusely truncate; eyes large, inner margins distinctly convergent downwards, distance between them below clearly narrower than height of an eye; malar space about as long as radius of an ocellus; supra-antennal tubercles low and obtuse, slightly elevated and merged to frontal walls; middle fovea broad and shallow, open anteriorly with a very low middle ridge; lateral fovea furrow like, narrow and deep; frons depressed, clearly shallower than eyes, frontal walls obtuse; interocellar furrow fine and deep, postocellar furrow fine and shallow; OOL: POL: OCL= 4: 1: 4; postocellar area slightly elevated and as high as ocelli, quadrate; lateral furrows deep and subparallel; head behind eyes in dorsal view about half as long as eye, lateral margins slightly dilated at middle and then feebly narrowed; occipital carina complete, without fold. Antenna distinctly longer than head and thorax together and longer than abdomen, pedicellum longer than broad, third segment slightly longer than fourth segment as 53:

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Figs. 1-5. *Tentredo humani* Wei et Niu, sp. nov. 1. Adult female. 2. Adult male. 3. The 9th 10th serrulae. 4. Penis valve. 5. Harpe and parapenis.

48, flagellum feebly compressed. Mesoscutellum low and roundly elevated without peak and carina; central part of mesepisternum convex with a low but distinct oblique transversal carina. Inner tibial spur of hind leg about $\frac{3}{5}$ length of hind basitarsus; claw without basal lobe, inner tooth slightly longer than outer tooth. Cell 2Rs in forewing distinctly longer than 1R1 and 1Rs together, hind anal cell sessile. Ovipositor longer than fore tibia, sheath slightly shorter than basal plate as 4: 5, apex somewhat tapering in lateral view. Lancet with 25 serrulae and 16-17 annular spines bands, middle serrulae obliquely protruding, inner side incised, middle spines bands slightly narrower than distance between bands, middle part of spines band with 7-8 rows spines (Fig. 3).

Male. Body length 12.5 mm (Fig. 2). Similar to female except: clypeus and labrum entirely white, ventral

side of fore and middle coxae and trochanters, macula on ventral side of hind coxa, apical margin of hind trochanter, anterior ventral side of each femur, fore tibia and basitarsus and anterior side of following 2-3 tarsomeres, small spot on apical part of middle and of hind tibia white, white macula on lateral corner of abdominal tergite 1 smaller than that of female, ventral side of tergites 2 to 5 each with a white macula; bottom of clypeus incision round, postocellar area broader than long, head in dorsal view short, lateral margins strongly narrowed backward, subgenital plate about as long as broad, apex round with a small middle incision; penis valve, harpe and parapenis as in Figs. 4-5.

Distribution. China (Shaanxi, Henan).

Etymology. This species is named after the name of the holotype collector, Dr. LV Nan.

Holotype ♀, Ningshan (alt. 1 600 m), Shaanxi Province, China, 16 June 1994, LV Nan. Paratypes: 1 ♂, Baiyunshan (34° 2' N, 112° E; alt. 1 650 m), Songxian, Henan Province, China, 19 July 2002, JIANG Ji Gang. 1 ♀, Mt. Wudang, Hubei Province, China, Aug. 1984; 1 ♀, Songbai (Shennongjia), Hubei Province, China, 21 June 1986, MAO Xiao-Yuan.

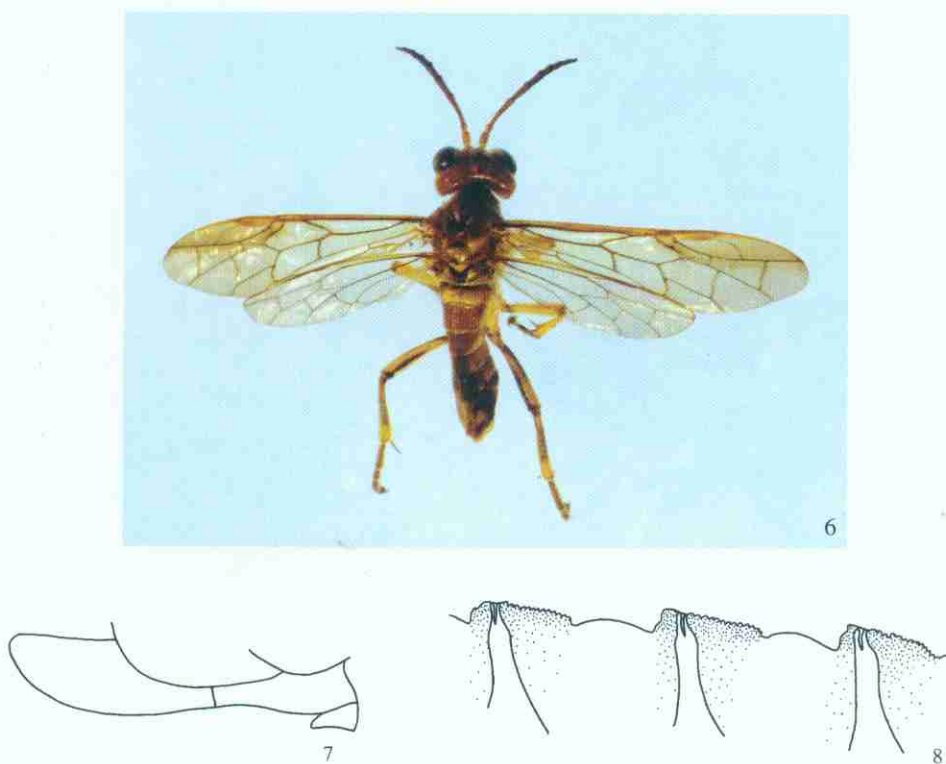
Remarks. This new species is a member of *Tenthredo pompilina* group and is somewhat similar to *T. frontatus* Malaise, 1945, but differs from the latter in: 1) posttergite shining with middle carina very low, 2) head dorsally feebly punctured, postocellar area as long as broad, mesoscutellum elevated roundly, wings distinctly infumated, antenna with the third segment longer than the fourth segment, the 4th abdominal sternite entirely white, annular spines bands in female lancet each with 7-8 rows spines, the middle serrulae roundly protruding (in the later species the posttergite microsculptured with middle carina high, front densely punctured, postocellar area wider than long, mesoscutellum elevated angularly, wings hyaline, the 4th abdominal sternite entirely blue, antenna with the third segment much shorter than the fourth segment, annular spines bands in female lancet each with 3-4 rows spines, the middle serrulae oblique and low triangularly protruding).

Tenthredo dolichomisca Wei et Niu, sp. nov. (Figs. 6-8)

Female. Body length 13 mm (Fig. 6). Brown;

clypeus, labrum, mandibles largely, palpi largely, a stripe on inner orbit and lower 1/3 of hind orbit, pronotum largely, a stripe on inner side of mesoscutum, mesoscutellum largely, posttergite, parapsis, postnotum largely, upper half of mesepisternum, middle part of mesosternum, mesepimeron and metapleuron entirely, tergite 1 and 9-10 largely, lateral sides of tergite 2-4, 4 oval spots on each of tergites 5-8, sternites 1-6, yellow; apex of mandibles, tentorial pit, bottom of lateral fovea, posterior half of lateral furrows, middle furrow of prescutum, notaulics, bottom of anterior basin and stripe of posterior margin of mesoscutellum, border between pronotum and mesepisternum, black brown; antennal flagellum gradually darkened to deep brown toward apex, apical margin of each segment black brown. Legs yellow, a spot on each trochanter, a spot on basal and apical part of fore and middle femora, a stripe on dorsal side of tibia black brown; anterior and posterior sides of hind coxa and hind femur dorsally each with a black stripe, basal 2/3 of hind tibia deep brown, dorsal side of each basitarsus and apex of each tarsomere black brown. Wings yellowish hyaline, slightly infumated at apex, a strip on vein Rs and nearby infumated, veins C, R1, r1 and stigma, yellowish brown, rest of veins deep brown. Body hairs pale brown.

Head dorsally shining; apical part of frons, middle part of postocellar area, middle part of temple with a few distinct punctures, clypeus, labrum and mandibles with some large and shallow punctures, thorax shining, mesonotum densely punctured, anterior slope of



Figs 6-8. *Tenthredo dolichomisca* Wei et Niu, sp. nov. 6. Adult female. 7. Ovipositor. 8. The 9th-11th serrulae.

mesoscutellum hardly punctured and shining, posterior slope of mesoscutellum and posttergite coarsely and densely punctured, mesopleuron strongly shining, only with a few minute punctures somewhere. First abdominal tergite strongly shining without punctures and microsculptures, other tergites coriaceous and minutely punctured.

Clypeus broadly incised to a depth about 1/3 length of clypeus, bottom round, lateral lobe obtuse; inner margins of eyes distinctly convergent downwards, distance between them below half as long as height of an eye; malar space slightly narrower than radius of lateral ocellus; supraantennal tubercles flat and low, middle fovea broad, round and shallow; lateral fovea broad furrow-like, distinctly deeper than middle fovea; frons evenly elevated, front wall low and obtuse; ocelli distinctly beyond top of eyes, interocellar furrow very shallow, postocellar furrow slightly broader and deeper than interocellar furrow; OOL: POL: OCL = 5: 2: 5; postocellar area weakly elevated, 1.3 times broader than long, without middle furrow; lateral furrows fine and shallow, convergent backwards, middle part slightly curved outwards; head in dorsal view slightly convex behind eyes and then distinctly narrowed, slightly longer than half length of eye; occipital carina complete, without fold. Antenna as long as head and thorax together, third segment 1.5 times as long as fourth segment, penult segment 1.5 times longer than broad. Mesoscutellum elevated, less than 2 times as broad as long, anterior slope of mesoscutellum clearly shorter than posterior slope, with a low but sharp middle carina; mesepisternum roundly elevated at middle, ventral thorn absent. First abdominal tergite elevated, distinctly broader than 2nd tergite, 5th to 7th abdominal segments broader than other segments distinctly, middle part of posterior margin of sternite 7 triangularly protruding, lateral sides straight without lateral lobes. Inner hind tibial spur slightly shorter than 3/5 length of basitarsus, hind basitarsus slightly shorter than following 4 tarsomeres together; claw with basal part slightly thickened but without basal lobe, inner tooth shorter than outer tooth. Petiole of hind anal cell about 1/4 length of c. a. Ovipositor as long as fore femur and 1st trochanter together, apex of sheath tapering in lateral view (Fig. 7), 1.4 times as long as basal plate. Lancet slender, with 32 serrulae, middle serrulae elevated trapezoidly, each with 14-15 minute outer subbasal teeth, inner subbasal teeth obtuse (Fig. 8); annular spine bands slightly narrower than distance between them.

Male. Unknown.

Distribution. China (Henan, Zhejiang).

Etymology. This specific epithet is derived from the Latin words "*dolicho*" and "*misca*", indicating the long posterior slope of mesoscutellum and body multicolored.

Holotype ♀, Laomiao (31° 39' N, 114° 47' E; alt.

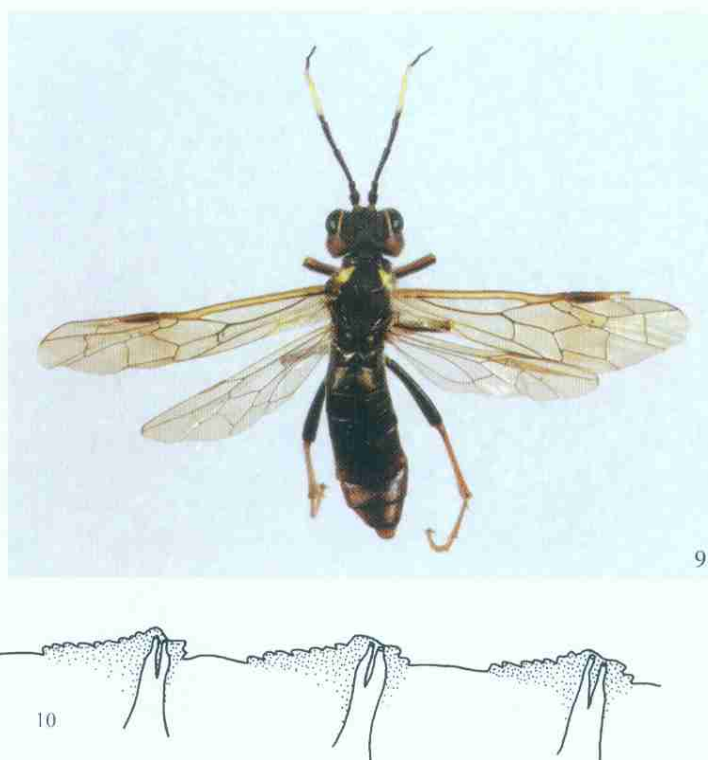
224 m), Liankangshan, Xinxian, Henan Province, China, 25 June 2006, ZHANG Shao Bing. Paratype 1 ♀, Mt. West Tianmu, Zhejiang Province, China, 9 June 1999, CHEN Xue Xin.

Remarks. This new species is a member of *T. fortunei* group (= *formosana* group) and is similar to *T. cylindrica* Rohwer, 1911, but differs from the latter in the body smaller (13 mm in length), mesosternum without black macula, the lateral sides of prescutum without V-shape yellow spot, the inner side of scutum with a yellow stripe, abdominal tergite 3 without a yellow transverse spot, the basal 2/3 of hind tibia distinctly darker than the apical 1/3, the breadth of mesoscutellum less than 2 times length, weakly elevated with the anterior slope much shorter than the posterior slope and the middle carina short, the postocellar area 1.3 times as broad as long (in the later species body length 15mm, mesosternum with a black macula, the lateral sides of prescutum with a V-shape yellow spot, the inner side of scutum entirely brown without a yellow stripe, the abdominal tergite 3 with a transverse yellow spot, the apical 3/4 of the hind tibia distinctly darker than the basal 1/4, mesoscutellum 2 times as broad as long and strongly elevated, the anterior slope longer than the posterior slope, middle carina long, postocellar area 2 times as broad as long).

Tenthredo pararubiapicilina Wei et Niu, sp. nov.
(Figs 9-10)

♀ Body length 14 mm (Fig. 9). Head reddish brown, most of labrum, apex of mandibles black brown, basal half of mandible yellow white; a large black macula covering most of head dorsally except anterior margin of supra-antennal tubercle brown and narrow margin of inner orbit yellowish white, anterior side of upper posterior orbit with a small black macula touching eye. Antenna black, apical 3/4 of 5th segment, 6th and 7th segments entirely yellowish white. Thorax and abdomen black, posterior corner of pronotum with a large yellowish white macula, tegula, lateral stripes of 4th and 5th abdominal tergites, most of 6th to 10th tergites and sheath reddish brown. Legs reddish brown, fore coxa largely, middle and hind coxae entirely, a dot on dorsal side of each trochanter, a stripe on dorsal side of fore and middle femora and of basal 1/3 of each tibia, hind femur except for ventral side, a dot on base and apex of hind tibia, apex of each tibial spur black. Wings slightly infuscated, apical 1/3 greyish, vein C, cell C, anterior margin of stigma pale brown, middle and posterior parts of stigma dark brown, other veins black.

Head strongly and densely punctured within black macula, almost mat; posterior orbits sparsely and finely punctured, shining; head below antennal sockets shining, malar space microsculptured, clypeus and labrum with some large punctures. Dorsal side of pronotum feebly punctured, strongly shining;



Figs. 9-10. *Tenthredo pararubiapialina* Wei & Niu, sp. nov. 9. Adult female. 10. The 9th-11th serrulae.

mesonotum and mesoscutellum finely and extremely, densely punctured with narrow interspaces finely microsculptured, mat, posttergite coarsely and densely punctured; metanotum strongly shining, metascutellum finely and densely punctured; upper and middle parts of mesepisternum coarsely and densely wrinkled, feebly shining, ventral side of mesepisternum finely and densely punctured and microsculptured, shining; metepimeron feebly microsculptured, metapleuron slightly microsculptured and strongly shining. 1st abdominal tergite finely microsculptured, microsculptures on other tergites gradually distinct toward apex.

Clypeus slightly convex, anterior margin circularly incised to a depth about 1/4 length of clypeus with bottom and lateral lobe roundish; inner margins of eyes distinctly convergent downwards, distance between them below as long as height of an eye; malar space 1.5 times diameter of lateral ocellus; supra-antennal tubercles short and small, elevated and evenly cut off, frontal wall low and obtuse; middle fovea broad and shallow, lateral foveae slightly deeper than middle fovea; interocellar and postocellar furrows fine and shallow; OOL: POL: OCL = 18: 5: 12; postocellar area flat and hardly convex, broader than long as 17: 12, without middle furrow; lateral furrows shallow and weak, slightly curved, divergent backwards distinctly; head in dorsal view distinctly convex behind eyes and then slightly narrowed, slightly shorter than length of eye; posterior orbit almost as broad as an eye; occipital carina complete, without

fold. Antenna as long as vein C of fore wing and slightly shorter than abdomen, 1st segment longer than broad as 5 2, 3rd segment 1.25 times as long as 4th segment, apical segments tapering toward apex. Middle furrow of prescutum vestigial; mesoscutellum slightly and roundly elevated, posterior slope with a fine and low middle carina; posttergite with a distinct middle carina; mesepisternum low triangularly elevated at middle, ventral thorn absent. Hind tarsus slender, tarsal pulvilli middle sized and slightly shorter than apical breadth of each tarsomere; inner tibial spur of hind leg about 2/3 length of hind basitarsus, hind basitarsus slightly shorter than following 3 tarsomeres together; claw without basal lobe, inner tooth slightly shorter than outer tooth. Forewing with vein 2r joining cell 2Rs at apical 1/3, vein c₁ joining cell 1M at basal 3/10, cell 2Rs slightly shorter than 1R1 and 1Rs together, middle part of vein 2r_m slightly curved with lower corner oblique outwards; hind anal cell sessile. Ovipositor slightly shorter than hind basitarsus, sheath 1.8 times as long as basal plate. Lancet narrow at base and with 22 serrulae, middle annular spines bands narrow and about 1/3 distance between spines bands; middle serrulae flat and low, slightly oblique, each with 2 inner subbasal teeth and 8-10 outer subbasal teeth, 9th-11th serrulae as in Fig. 10.

Male. Unknown.

Distribution. China (Henan).

Etymology. The species is named after *rubiapialina* as the new species is similar to the later species.

Holotype ♀, Baotianman (33°30' N, 111°57' E; alt. 1854 m), Henan Province, China, 25 June 2006, ZHONG Yi-Hai. Paratype 1 ♀, Longyuwan (33°81' N, 111°06' E; alt. 1600 nr 1800 m), Luanchuan, Henan Province, China, 21 July 2004, LIU Wei-Xing.

Remarks. This new species is similar to *T. rubiapialina* Wei, 2002, but differs from the latter in the basal 2 segments of antenna, middle and hind coxae and mesepisternum entirely black, the 8th antennal segment blank brown, metascutellum finely and densely punctured, almost mat, the 2nd to 4th abdominal tergites without white lateral macula, the dorsal side of each tibia with a black stripe, the serrulae with fewer and larger subbasal teeth (in the later species the basal 2 segments of the antenna, middle and hind coxae and mesepisternum reddish brown, the 8th antennal segment white,

metascutellum sparsely punctured, strongly shining, the lateral sides of the 2nd to 4th abdominal tergites each with a large white macula, the serrulae with more and smaller subbasal teeth).

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中国叶蜂属 (膜翅目, 叶蜂科) 三新种

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摘要 记述采自中国河南、陕西、浙江的叶蜂科叶蜂亚科叶蜂属 3 新种: 吕氏横斑叶蜂 *Tenthredo lunani* Wei et Niu, sp. nov., 三斑槌腹叶蜂 *Tenthredo ddichomisa* Wei et Niu, sp. nov.,

关键词 膜翅目, 叶蜂科, 叶蜂属, 新种, 中国.

中图分类号 Q969.542.6

黑腰白端叶蜂 *Tenthredo pararubiapialina* Wei et Niu, sp. nov.。新种模式标本保存于湖南长沙中南林业科技大学昆虫模式标本室。

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